

ADDITIONAL NOTES ON THE GENUS VERBENA. V

Harold N. Moldenke

VERBENA CAROLINA f. ALBIFLORA Moldenke

Additional bibliography: Moldenke, Phytologia 15: 495. 1968.

Additional citations: MEXICO: Sinaloa: H. S. Gentry 6212 (Du--319703).

VERBENA CILIATA Benth.

Additional & emended bibliography: A. Gray, Synt. Fl. N. Am., ed. 1, 2 (1): 337 (1878) and ed. 2, 2 (1): 337. 1886; Martin & Bradley, Seed Ident. Man. 194. 1961; Moldenke, Phytologia 14: 280--281. 1967; Moldenke, Résumé Suppl. 15: 2, 3, & 15. 1967.

Rzedowski says that his no. 3051 had "flores moradas", while on Mick & Roe 15 the corollas were "violet", Moldenke & Moldenke 2160 "light red-violet", Moldenke & Moldenke 2192 & 2193 "red-magenta", and on R. C. West G.14c "purple".

Recent collectors have found this plant growing on rocky slopes in grasslands and on deserts with extensive desert pavement and Agave, Aloë, and cactus common. The Andrew Moldenkes describe the plant as "an abundant roadside ground cover" in Tlaxcala and an "extremely abundant prostrate ground cover plant on both sides of the Tlaxcala-Veracruz border" and "a roadside weed" in the Federal District of Mexico. They report that on their no. 2155 the mature flowers had "nearly bright red-violet" corollas, while no. 2154 was a color deviant, from the same locality, with its corollas "light-blue with violet center". They point out that, in their opinion, this is not a significant difference.

Material has been misidentified and distributed in herbaria under the name V. erinoides Willd. On the other hand, the DeWolf 791, distributed as V. ciliata, is actually V. bipinnatifida Nutt., Tharp 49-1119 is V. ciliata var. longidentata Perry, H. Gentry 5-94 and J. Reverchon s.n. [Curtiss 1963**] are V. pumila Rydb., and Nelson & Nelson 4983 is V. wrightii A. Gray.

Additional citations: MEXICO: Coahuila: Mick & Roe 15 (Ws). Durango: A. R. Moldenke 1577 (Rf), 1610 (Ac). Federal District: Moldenke & Moldenke 2160 (Ac). Guanajuato: A. R. Moldenke 1809 (Rf), 1814 (Rf); Moldenke & Moldenke 2154 (Rf), 2155 (Rf). Hidalgo: Quintero 349 (Du--510515); R. C. West B.11 (Ac), G.14c (Ws), J.24 (Ac). Jalisco: A. R. Moldenke 1820 (Ac); Moldenke & Moldenke 2150 (Rf). Michoacán: A. R. Moldenke 1669 (Ac), 1749 (Ac). Nayarit: A. R. Moldenke 1644 (Ac). Nuevo León: Edw. Palmer 1045 (Ms--30786). Oaxaca: B. Hallberg 1064 (Mi). San Luis Potosí: J. Rzedowski 3051 (Du--510433). Tlaxcala: Moldenke & Moldenke 2193 (Rf). Veracruz: Moldenke & Moldenke 2192 (Ac). Zacatecas:

Moldenke & Moldenke 2143 (Ac). CULTIVATED: Germany: Herb. F. J.
Young s.n. (Ws).

VERBENA CILIATA var. LONGIDENTATA Perry

Additional bibliography: Moldenke, Résumé Suppl. 15: 2 & 3.
1967; Moldenke, Phytologia 14: 281. 1967.

McCart found this plant growing in black calcareous clay in Texas.

Additional citations: TEXAS: Nueces Co.: A. A. Heller 1385
(Ms—30756). Parker Co.: McCart 8964 (Du—511963). Travis Co.:
Tharp 49-1118 (Ms—34282). MEXICO: Michoacán: A. R. Moldenke
1695 (Rf).

VERBENA CILIATA var. PUBERA (Greene) Perry

Additional bibliography: Moldenke, Phytologia 14: 281. 1967.

Additional citations: NEW MEXICO: Dona Ana Co.: I. L. Wiggins
13392 (Du—450420).

VERBENA CLAVATA Ruiz & Pav.

Additional bibliography: H.B.K., Nov. Gen. & Sp. Pl., ed. folio, 2: 221 (1817) and ed. quart., 2: 273. 1818; Barnhart, Bull. Torrey Bot. Club 29: 590. 1902; Moldenke, Phytologia 14: 281. 1967.

It should be noted that the H.B.K. reference dates given above have been authenticated by Barnhart (1902).

VERBENA CLOVERAE Moldenke

Additional bibliography: Moldenke, Phytologia 13: 246—248.
1966; Shinn, Univ. Kans. Sci. Bull. 46: 891. 1967.

Shinn (1967) reports that the bee, Calliopsis (Verbenapis) micheneri Shinn, is known only from the part of Texas where this species of Verbena is native. Barrera found V. cloverae growing in fine sandy silt in Zapata County, Texas. The Tharp & York 27, previously cited by me as typical V. cloverae, is actually f. alba Lundell.

Additional citations: TEXAS: Kleberg Co.: M. C. Johnston
53253.7 (Ms—44071). Zapata Co.: E. Barrera 5 (Du—511959).

VERBENA CLOVERAE f. ALBA Lundell

Additional bibliography: Moldenke, Phytologia 9: 201. 1963.

Additional citations: TEXAS: Dimmit Co.: Tharp & York 27
(Au—193914).

VERBENA COCHABAMBENSIS Moldenke

Additional bibliography: A. María, Pl. Valle Cochabamb. 2:
42. 1966; Moldenke, Phytologia 14: 281. 1967.

VERBENA CORYMBOSA Ruiz & Pav.

Additional synonymy: Verbena corimbosa Ruiz & Pav. apud J. E. Gonzalez, Revist. Cientif. Mex. 1 (14): 13, sphalm. 1881.

Additional bibliography: J. E. Gonzalez, Revist. Cientif. Mex. 1 (14): 13. 1881; H. C. Comber, Gard. Chron., ser. 3, 92: 373. 1932; Moldenke, Phytologia 14: 281. 1967.

Recent collectors have found this plant growing by streams. Gonzalez (1881) records the common name "alfombrilla" for this species. The Rambo, Herb. Anchieta 51505, distributed as V. corymbosa, is actually V. lobata Vell.

Additional citations: BRAZIL: Rio Grande do Sul: Sehnem 5158 (B).

VERBENA CRITHMIFOLIA Gill. & Hook.

Additional & emended bibliography: Hieron., Bol. Acad. Nac. Cienc. Córdoba 4: [Sert. Sanjuan.] 68 (1881) and 4: 405 & 409. 1881; Lorentz & Niederlein, Bot. Exped. Rio Negro 264. 1881; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 2: 1178. 1895; H. C. Comber, Gard. Chron., ser. 3, 92: 373. 1932; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 2, 2: 1178 (1946) and pr. 3, 2: 1178. 1960; Moldenke, Phytologia 14: 281. 1967.

Additional citations: ARGENTINA: Mendoza: Paci 514 (Ws).

VERBENA CUNEIFOLIA Ruiz & Pav.

Additional & emended bibliography: J. Gómez, Bicta 6: 107, 109, 115, & 119. 1966; Moldenke, Phytologia 14: 281 & 282. 1967.

Gómez (1966) records this species from Ancash, Peru.

xVERBENA DEAMII Moldenke

Additional synonymy: xVerbena dodgei Boivin, Naturaliste Can. 93: 429 & 437. 1966.

Additional & emended bibliography: Hartley, Univ. Iowa Stud. Nat. Hist. 21: 144. 1966; Gaiser & Moore, Surv. Vasc. Pl. Lambton Co. 100--101. 1966; Moldenke, Phytologia 13: 247. 1966; Boivin, Naturaliste Can. 93: 429 & 437. 1966; Moldenke, Résumé Suppl. 15: 1. 1967.

Boivin (1966) proposes the name, xVerbena dodgei Boivin, for the hybrid between V. bracteata Lag. & Rodr. and V. hastata L. and discards my earlier binomial because it was unaccompanied by a Latin description when proposed. He describes the hybrid as follows: "habitus brevius et modo decumbens V. bracteatae, sed spicis numerosis, gracilibus bracteis brevibus modo V. hastatae. Folia grosse dentata, nec lobata sed oblongo lanceolata et minora 2--6 cm long., ad basas in petiolum brevem attenuata modo V. bracteatae. Bracteae lineares, praecipue 3--5 mm long." As type he designates C. K. Dodge 62078 -- in whose honor it is named -- from sandy soil, Point Edward, Lambton County, Ontario, collected on August 20, 1903, and deposited in the National Herbarium of Canada.

According to Gaiser & Moore (1966) this hybrid was listed by Dodge from Point Edward. Both parental species, but not the hybrid, are found there now. I have not seen the 62078 collection, but all the other specimens collected by Dodge at Point Edward and

identified by him as this hybrid have proved to be xV. perriana Moldenke instead. As yet I have not seen xV. deamii from Canada and so, until I can see the type material, I shall have to regard the status of xV. dodgei as doubtfully synonymous.

Hartley (1966) found xV. deamii "rare in dry sandy soil" in Allamakee County, Iowa.

Additional citations: ILLINOIS: Henderson Co.: H. N. Patterson s.n. [Oquawka, July] (Ms--30838).

VERBENA DELTICOLA Small

Additional bibliography: Moldenke, Phytologia 14: 281. 1967.

The corollas are described as "reddish-purple" on S. S. White 1425.

Additional citations: TEXAS: Cameron Co.: Davis & Johnston 53253.21 (Ms--44072). MEXICO: Nuevo León: Edw. Palmer 1051 (Ms--30751); S. S. White 1425 (Mi).

VERBENA DISSECTA Willd.

Additional bibliography: Meyer & Weyrauch, Guia Excurs. Biol. Tucum. 64 & 123. 1966; Moldenke, Phytologia 14: 281-282. 1967.

The O. Camargo 2022, Herb. Anchietae 48478 & 62124, and Sehnem 2128, distributed as V. dissecta and so cited by Rambo (1965), are actually V. selloi Spreng., while Rambo, Herb. Anchietae 51652 is V. tenuisecta Briq.

Additional citations: ARGENTINA: Catamarca: Brizuela 375 (Ws). Córdoba: Villafañe 120 (Du--330709). Santiago del Estero: Ruiz Huidobro 3137 (Ms--34283).

VERBENA DISSECTA f. ALBA Moldenke

Additional bibliography: Moldenke, Phytologia 14: 282. 1967.

The Herter 1805 [Herb. Herter 96556] cited by me in a previous installment of these notes is actually V. pulchella Sweet.

VERBENA EHRENBERGIANA Schau.

Additional bibliography: Moldenke, Phytologia 13: 194. 1966.

Additional citations: MEXICO: Nuevo León: Pringle 1948 (Ms--30787).

VERBENA ELEGANS H.B.K., Nov. Gen. & Sp. Pl., ed. folio, 2: 220-221. 1817.

Additional & emended bibliography: H.B.K., Nov. Gen. & Sp. Pl., ed. folio, 2: 220-221 (1817) and ed. quart., 2: 273. 1818; Barnhart, Bull. Torrey Bot. Club 29: 590. 1902; L. H. Bailey, Man. Cult. Pl., ed. 2, 840, 841, & 1113. 1949; Moldenke, Phytologia 14: 282. 1967; Moldenke, Résumé Suppl. 15: 3. 1967.

It should be noted that the H.B.K. reference dates given above have been authenticated by Barnhart (1902).

Additional citations: MEXICO: Hidalgo: Pringle 6908 (Ms--30788). San Luis Potosí: D. B. Ward 5804 (Ac).

VERBENA ELEGANS var. ASPERATA Perry

Additional bibliography: L. H. Bailey, Man. Cult. Pl., ed. 2, 841 & 1113. 1949; Moldenke, Phytologia 13: 248. 1966; Moldenke, Résumé Suppl. 15: 3. 1967.

The corollas are described as "magenta" on Stanford, Lauber, & Taylor 2486 and as "purple" on Breedlove 14418.

Verbena elegans var. asperata is actually very closely related to and often somewhat difficult to distinguish from forms of the northern V. canadensis (L.) Britton. In V. canadensis, however, the plants are normally only somewhat and quite irregularly hirsute, the spike elongate conspicuously in age, the bractlets are slightly shorter than or equal to the calyx they subtend, the calyx is 10—13 mm. long, with weak and irregular pubescence, and the calyx-teeth are 2—3 mm. long. In V. elegans var. asperata, on the other hand, the plants are always densely hispid-hirsute, the spikes are compact even at maturity, the bractlets are 1/2 to 2/3 as long as the calyx they subtend, the calyx is 8—10 mm. long, with uniform stiff pubescence, and the calyx-teeth are rarely over 2 mm. long.

Additional citations: MEXICO: Chiapas: Breedlove 14418 (Ac). Coahuila: Edw. Palmer 1052 (Ms--30828). Tamaulipas: Stanford, Lauber, & Taylor 2486 (Du--366260). CULTIVATED: Germany: Wagenitz s.n. [Mus. Bot. Berol. Gartenherb. W.384] (Rf).

xVERBENA ENGELMANNII Moldenke

Additional & emended bibliography: Gaiser & Moore, Surv. Vasc. Pl. Lambton Co. 100. 1966; Boivin, Naturaliste Can. 93: 429. 1966; Hartley, Univ. Iowa Stud. Nat. Hist. 21: 162. 1966; Moldenke, Phytologia 14: 282. 1967; Moldenke, Résumé Suppl. 15: 1 & 2. 1967.

The Ewan 19083, distributed as this hybrid, is actually V. montevidensis Spreng., while F. R. Saint John s.n. [11 Sept. 1930] is V. urticifolia L.

Additional citations: NEW HAMPSHIRE: Cheshire Co.: W. Deane s.n. [Aug. 10, 1890] (Ms--80929, Ms--80930). ILLINOIS: Tazewell Co.: V. H. Chase 3230 (Du--367442). MISSOURI: Saint Louis: Egert s.n. [De Hodiamont Av., 4 Aug. 1875] (Ms--30835).

VERBENA EPHEDROIDES Cham.

Additional & emended bibliography: Hieron., Bol. Acad. Nac. Cienc. Córdoba 4: 408. 1881; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 2: 1178 (1895), pr. 2, 2: 1178 (1946), and pr. 3, 2: 1178. 1960; Moldenke, Phytologia 13: 195. 1966.

VERBENA FILICAULIS Schau.

Additional bibliography: Moldenke, Phytologia 13: 195—196. 1966.

O. Camargo 3118 is anomalous in that the plant has not turned black in drying!

Additional citations: BRAZIL: Paraná: Hatschbach 14192 (Rf). Rio Grande do Sul: O. Camargo 3118 [Herb. Anchieta 62898] (B); Rambo, Herb. Anchieta 54571 (B), 54642 (B); Sehnem 5131 (B).

VERBENA FLAVA Gill. & Hook.

Additional bibliography: H. C. Comber, Gard. Chron., ser. 3, 92: 391. 1932; Moldenke, Phytologia 14: 283. 1967.

VERBENA GLABRATA H.B.K., Nov. Gen. & Pl. Pl., ed. folio, 2: 223--224. 1817 [not V. glabrata R. A. Phil., 1870].

Additional & emended bibliography: H.B.K., Nov. Gen. & Sp. Pl., ed. folio, 2: 223--224 (1817) and ed. quart., 2: 276--277. 1818; Barnhart, Bull. Torrey Bot. Club 29: 590. 1902; Moldenke, Phytologia 14: 283. 1967; Moldenke, Résumé Suppl. 15: 4. 1967.

It should be noted here that the H.B.K. reference dates given above have been authenticated by Barnhart (1902). The Schimpff 132 cited by me a V. glabrata in a previous installment of these notes, proves to be V. litoralis H.B.K. instead.

Additional citations: ECUADOR: Pichincha: Ugent & Ugent 5568 (Ac, Ws).

VERBENA GLABRATA var. **TENUISPICATA** Moldenke

Additional bibliography: Moldenke, Phytologia 14: 283. 1967; Moldenke, Résumé Suppl. 15: 4. 1967.

This plant has been found in flower and fruit in April.

Additional citations: GALAPAGOS ISLANDS: Albemarle: J. T. Howell 9007 (Gg--462945); A. Stewart 3317 (Bi—isotype, W—921527—isotype).

VERBENA GOODDINGII Briq.

Additional bibliography: Anon., U. S. Dept. Agr. Bot. Subj. Index 15: 14361. 1958; Munz, Calif. Desert Wildfls. 47, pl. 62. 1962; Holmgren & Reveal, U. S. Forest Serv. Res. Paper INT.32: [Checklist Vasc. Fl. Intermont. Reg.] 91. 1966; Moldenke, Phytologia 13: 248. 1966; Moldenke, Résumé Suppl. 15: 2. 1967.

Additional illustrations: Munz, Calif. Desert Wildfls. pl. 62 [in color]. 1962.

Recent collectors have found this species growing in granite ravines with Rhamnus californica and Quercus turbinella, on the crest of a ridge in a grove of Pinus ponderosa and Quercus gambelii, in granite alluvium on gently south-sloping "banada", along a dry stream-bed which has occasional seep areas, on volcanic slopes, in areas sparsely covered by Adenostoma fasciculatum, among boulders along creeks, and on rocky slopes in Juniperus-Artemisia tridentata association. Gould describes the plant as much-branched from a thick rootstock. Demaree speaks of this species as forming "wonderful clumps" and as common in low sandy areas on dry ridges in Mohave County, Arizona.

The corollas are described as "blue" on Breedlove 4202, "lavender-blue" on C. B. Wolf 7021 & 9680, "blue-violet" on F. W.

Gould 1730, "lavender" on Broder 648 & 704, "light-lavender" on Broder 508a, "pink" on Broder 811, "lilac-blue" on Broder 348, "purple" on Breedlove 1130, and "light-purple" on H. W. Graham 7-15-9. Benson found the plant growing at 365 m. altitude. Holmgren & Reveal (1966) misspell the abbreviation for Briquet's name "Brig." Munz (1962) says that the species is found from the eastern Mohave Desert to Utah and Arizona in dry canyons and on slopes at 4000 to 6500 feet altitudes, blooming from April to June.

Material has been misidentified and distributed in herbaria under the name *V. ciliata* var. *ciliata*. On the other hand, the H. W. Graham 8-9-5 and J. J. Thornber s.n. [April 24, 1903], distributed as typical *V. gooddingii*, are actually var. *nepetifolia* Tidestr., I. L. Wiggins 15074 and Wiggins & Thomas 187 are *V. setacea* Perry, and Nelson & Nelson 5014 and C. L. Porter 3016 are *V. wrightii* A. Gray.

Additional citations: UTAH: Washington Co.: F. W. Gould 1730 (Du--324987). NEW MEXICO: Guadalupe Co.: Snell s.n. [May 4, 1963] (Ws). ARIZONA: Coconino Co.: A. A. Heller 15794 (Du--312032). Maricopa Co.: L. Benson 10018 (Du--326795). Mohave Co.: Breedlove 1130 (Du--489070); Demaree 38945 (Rf), 40105 (Ac), 44480 (Rf); Snell s.n. [April 27, 1963] (Ws). Pima Co.: H. W. Graham 7-15-9 (Du--331448). Pinal Co.: J. J. Thornber s.n. [Oracle, May 28, 1905] (Du--326820). Yavapai Co.: Demaree 42494 (Du--447061); N. H. Russell 11233 (Ws); Snell s.n. [May 3, 1963] (Ws). CALIFORNIA: San Bernardino Co.: C. B. Wolf 7021 (Du--339505), 9680 (Du--339324). County undetermined: Edw. Palmer 339 [S. E. Cal.] (Ms--30785). MEXICO: Baja California: Breedlove 4202 (Du--497215); Broder 348 (Du--500789), 508a (Du--500790), 648 (Du--500791), 704 (Du--500792), 811 (Du--500793); Wiggins & Wiggins 16073 (Du--506566).

VERBENA GOODDINGII var. NEPETIFOLIA Tidestr.

Additional bibliography: Anon., U. S. Dept. Agr. Bot. Subj. Index 15: 14361. 1958; Holmgren & Reveal, U. S. Forest Surv. Res. Paper INT.32: [Checklist Vasc. Fl. Intermont. Reg.] 91. 1966; Moldenke, Phytologia 13: 248. 1966.

Recent collectors have found this plant growing with *Lycium* and *Prosopis* in a gravelly shallow arroyo and in a wash associated with *Euphorbia tomentulosa*, *Idria columnaris*, *Ferocactus* sp., *Larrea divaricata*, *Pachycereus pringlei*, *Acacia greggii*, *Agave* sp., and *Opuntia* sp. Thornber refers to it as a "handsome species". The flowers are described as "pale-pink" on Carter, Alexander, & Kellogg 1885.

Additional citations: ARIZONA: Pima Co.: H. W. Graham 8-9-5 (Du--321525); J. J. Thornber s.n. [April 24, 1903] (Du--325115).

MEXICO: Baja California: Carter, Alexander, & Kellogg 1885 (Du--349168); Hastings & Turner 63-192 (Du--501209). Sonora: A. R. Moldenke 1529 (Rf), 1541 (Ac), 1542 (Ac), 1543 (Rf); I. L. Wiggins 11775 (Du--346430).

VERBENA GRACILESCENS (Cham.) Herter

Emended synonymy: Verbena gracilescens Cham. ex Hieron., Bol. Acad. Nac. Cienc. Córdoba 4: 405. 1881.

Additional bibliography: Hieron., Bol. Acad. Nac. Cienc. Córdoba 4: 405. 1881; Lorentz & Niederlein, Bot. Exped. Rio Negro 264. 1881; Mayer & Weyrauch, Guia Excurs. Biol. Tucum. 64 & 123. 1966; Moldenke, Phytologia 14: 283. 1967.

The corollas on Venturi 2300 are described as "clear-violet". The Pivetta 966 and Herb. Anchietae 59154, distributed as V. gracilescens and so cited by Rambo (1965), are actually V. montevidensis Spreng.

Additional citations: BRAZIL: Rio Grande do Sul: Rambo, Herb. Anchietae 30975 (B). BOLIVIA: Province undetermined: M. Bang 1058 (Ws). ARGENTINA: Santa Fé: Ruiz Huidobro 3080 (Du--330708, Ms--34286). Tucumán: Venturi 2300 (Du--372484).

VERBENA GRACILIS Desf.

Additional bibliography: Robinson & Greenm., Am. Journ. Sci. 150 [ser. 3, 50]: 143. 1895; Moldenke, Phytologia 13: 197. 1966.

Breedlove found this plant growing on a road bank in San Luis Potosí. The Andrew Moldenkes describe the plant as a "prostrate alpine herb" in Zacatecas and as growing on road shoulders in Puebla. The corollas are described as "blue" on Breedlove 15478.

This species is said by Robinson & Greenman (1895) to resemble V. grisea Robinson & Greenm. in habit, differing in the characters of pubescence and foliage.

Additional citations: ARIZONA: Pima Co.: Pringle s.n. [Gardiner's Spring, June 25, 1882] (Ms--30782). Santa Cruz Co.: A. R. Moldenke 1868 (Rf). MEXICO: Durango: A. R. Moldenke 1574 (Ac). Federal District: Pringle 6539 (Ms--30814). Guanajuato: A. R. Moldenke 1810 (Rf). Jalisco: A. R. Moldenke 1819 (Ac). Puebla: Moldenke & Moldenke 2316 (Rf). San Luis Potosí: Breedlove 15478 (Ac). Zacatecas: A. R. Moldenke 1594 (Rf); Moldenke & Moldenke 2140 (Ac).

VERBENA GRISEA Robinson & Greenm.

Additional & emended bibliography: Robinson & Greenm., Am. Journ. Sci. 150 [ser. 3, 50]: 142-143 & 147. 1895; B. L. Robinson, Proc. Am. Acad. 38: 197. 1902; Moldenke, Phytologia 14: 283-284. 1967.

The surname of the collector of the type of this species is "Baur", not "Bauer" as stated by me in previous installments of these notes. It is cited from Albemarle Island by Robinson & Greenman on page 147 of their 1895 work, but this was a typograph-

ic error, as pointed out by Robinson in 1902.

VERBENA HALEI Small

Additional bibliography: Hutchins, Sida 3: 182. 1967; Moldenke, Phytologia 14: 284. 1967; Moldenke, Résumé Suppl. 15: 2. 1967.

Demaree describes this species as "common on dry ridges" in Cass County, Texas, while Dominguez M. & McCart found it growing in wet places at the water's edge in Tamaulipas. In Alabama it has been found along sandy dry open roadsides. The corollas are described as "blue" on S. S. White 1359. Hutchins (1967) cites his nos. 453, 1049, & 1101 from Garza County, Texas.

Additional citations: ALABAMA: Mobile Co.: Iltis, Crosswhite, Kawano, & al. 21349 (Ws). LOUISIANA: Allen Par.: Ewan 21038 (Rf). Caldwell Par.: Ewan 19201 (Ac). Cameron Par.: Ewan 21348 (Ac). Hancock Par.: Ewan 19736 (Ac). Natchitoches Par.: Ewan 19238 (Ac). Rapides Par.: Ewan 19377 (Rf). Saint Tammany Par.: DeWolf 743 (Ms-34317). TEXAS: Calhoun Co.: Demaree 22711 (Ms-50425). Cass Co.: Demaree 53842 (Ac). Grayson Co.: H. Gentry 50-198 (Ms-34291). Harris Co.: Nickerson s.n. [April 10, 1950] (Ms-34287). Lavaca Co.: Strother 185 (Du--511234). Webb Co.: Edw. Palmer 1043 (Ms-30802). Wilson Co.: S. S. White 1359 (Mi). MEXICO: Tamaulipas: Dominguez M. & McCart 8183 (Du-511274).

VERBENA HASTATA L.

Additional & emended bibliography: Bischoff, Handb. Bot. Term. 1: Erk. Taf. [9], pl. 22, fig. 651. 1830; Bischoff, Organ. Syst. Art. Regist. 23. 1849; A. Gray, Syn. Fl. N. Am., ed. 1, 2 (1): 336. 1878; Fowler, Rep. Soc. Agr. N. Bruns. 1878, App. B: 47. 1879; G. U. Hay, Bull. Nat. Hist. Soc. N. Bruns. 2: 30. 1883; J. Macoun, Cat. Can. Pl. 1: 379. 1884; Fowler, Bull. Nat. Hist. Soc. N. Bruns. 4: 50. 1885; A. Gray, Syn. Fl. N. Am., ed. 2, 2 (1): 336. 1886; G. H. Buek, Wild Fls. Am. 1 (1): [11-12], pl. 9. 1894; S. N. F. Sanford, Rhodora 6: 88. 1904; P. B. Kennedy, Annot. List Wild Fls. Calif. 112. 1917; Grieve & Leyel, Modern Herb., pr. 1, 2: 831-832. 1931; E. S. & F. E. Clements, Natl. Geogr. Mag. 76: 240. 1939; E. R. Spencer, Just Weeds 201, 203, & 204. 1940; A. H. Holmgren, Handb. Vasc. Pl. North. Wasatch 145. 1948; L. H. Bailey, Man. Cult. Pl., ed. 2, 840 & 1113. 1949; Russell, Ledingham, & Coupland in Fraser & Russell, Annot. List Pl. Saskat. 36. 1953; Hylander, Macm. Wild Flow. Book 33 & 337, pl. 166L. 1954; H. L. Mason, Fl. Marshes Calif. 677. 1957; Anon., U. S. Dept. Agr. Bot. Subj. Index 15: 14361. 1958; Hagmeier, N. Bruns. Fl. 13. 1959; R. M. Carleton, Ind. Common Names Herb. Pl. 15 & 17. 1959; Grieve & Leyel, Modern Herb., pr. 2, 2: 831-832. 1959; Martin & Bradley, Seed Ident. Man. 35 & 194, fig. 235 & 260. 1961; Marie-Victorin, Fl. Laurent., ed. 2, 489 & 490, fig. 170. 1964; Mohlenbrock & Voigt, Trans. Ill. Acad. Sci. 58 (4): 295. 1965; Boivin, Naturaliste Can. 93: 429. 1966; Gaiser & Moore, Surv. Vasc. Pl. Lambton Co. 100. 1966; Hartley, Univ. Iowa Stud. Nat. Hist. 21: 144. 1966; Wunderlin, Trans. Ill. Acad. Sci. 59 (2): 143. 1966.